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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,248	02/01/2002	Yoshihiro Ishikawa	219015US2	8892

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EXAMINER	
CAI, WAYNE HUU	
ART UNIT	**PAPER NUMBER**
2681	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/060,248	ISHIKAWA ET AL.	
	Examiner	Art Unit	
	Wayne Cai	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4 & 6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, and 11-13 are rejected under 35 U.S.C. 103(a) as being anticipated by Lindsay et al (US 2002/0009070 A1) in view of Ida et al (US 2002/0082036 A1).

Regarding claim 1, Lindsay et al disclose a handover control method used in a mobile communication system which includes communication apparatuses having

functions of base stations, a mobile station and a communication control apparatus which controls connections between said communication apparatuses and said mobile station (figures 2 and 19), said handover control method comprising the steps of:

- said mobile station switching a communication apparatus of a communication partner to another communication apparatus when a communication quality value between said communication apparatus of said communication partner and said mobile station falls below a first threshold which is better than a limitation value by which communication is available (paragraph 0230, lines 1-6).
- wherein said communication control apparatus selects at least a handover destination candidate communication apparatus from among communication apparatuses surrounding said communication apparatus of said communication partner when said communication quality value falls below a second threshold which is better than said first threshold (paragraph 0228);

Lindsay et al do not disclose the method of communication control apparatus keeps wireless resources of said at least a handover destination candidate communication apparatus which is selected.

Ida et al disclose the method of communication control apparatus keeps wireless resources of said at least a handover destination candidate communication apparatus which is selected (paragraph 0053, lines 16-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lindsay's et al method of a handover control with Ida's et al method of keeping wireless resources because the mobile users do not want to discontinue the conversation when this process of handing over is taking place.

Regarding claim 2, Lindsay et al and Ida et al disclose all the limitations of claim 1, Ida further disclose the handover control method comprising steps of:

- said communication control apparatus notifying said mobile station of a handover destination candidate communication apparatus for which wireless resources are kept in said at least a handover destination candidate communication apparatus (paragraph 0053); and

However, Lindsay et al disclose the method of:

- mobile station switching said communication apparatus of said communication partner to said handover destination candidate communication apparatus which is notified by said communication control apparatus when said communication quality value falls below said first threshold (paragraph 0230, lines 1-6, and paragraph 0232).

Regarding claim 3, Lindsay et al and Ida et al disclose all the limitations of claim 1. In addition, Lindsay et al also teach the handover control method comprising the steps of: said mobile station judging whether said communication quality value falls below said second threshold, and sending a request for selecting said at least a handover destination candidate communication apparatus to said communication

control apparatus when said communication quality value falls below said second threshold (paragraphs 0228, and 0230-0231).

Regarding claim 4, Lindsay et al and Ida et al teach all the limitations of claim 1. In addition, Ida et al teach the handover control method as claimed in claim 1, comprising the steps of:

- when said communication control apparatus selects a plurality of handover destination candidate communication apparatuses (paragraph 0059), said communication control apparatus determining priorities of said plurality of handover destination candidate communication apparatuses (paragraph 0058);

Even though Ida et al do not explicitly teach that the communication control apparatus determines priorities, eventually what the system does is to identify the mobile location and based on the signal strength, rank priorities of handover destination candidate communication apparatuses, further wherein.

- said communication control apparatus notifying said mobile station of handover destination candidate communication apparatuses in said plurality of handover destination candidate communication apparatuses for which wireless resources are kept and corresponding priorities (paragraph 0053);
- said mobile station switching said communication apparatus of said communication partner to one of said notified handover destination candidate communication apparatuses according to said priorities.

It is obvious that communication control apparatus rank priorities of handover destination candidate communication apparatuses; therefore, the mobile station is switching from communication partner to the notified handover destination communication apparatuses in the ranked order.

Claims 11-13 are rejected for the same reasons as set forth of claims 1-2.

5. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al (US 2003/0016648 A1) in view of Ida et al (US 2002/0082036 A1), and in further view of Raith (US – 6,711,408 B1).

Regarding claims 5, Lindsay et al, and Ida et al disclose all the limitations. However, Lindsay et al, and Ida et al do not teach the handover control method comprising the steps of: sending mobile station information including a history of movement of mobile station and received powers of perch channels from communication apparatuses surrounding the communication partner.

Raith discloses the handover method comprising the steps of:

- said mobile station sending mobile station information to said communication control apparatus, said mobile station information including a history of movement of said mobile station and received powers of perch channels from communication apparatuses surrounding said communication apparatus of said communication partner (column 6, lines 31-38);
- said communication control apparatus having a history of mobile station information, said history of mobile station information including a history

of movement of said mobile station and received powers of perch channels from communication apparatuses surrounding said communication apparatus of said communication partner for past successful handover (column 6, lines 38-50).

- said communication control apparatus selecting said at least a handover destination candidate communication apparatus according to said mobile station information sent from said mobile station and said history of mobile station information for past successful handover (column 6, lines 50-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lindsay's et al and Ida's et al handover control method with Raith's method of including mobile station information because it would help in the process of making handover decision more efficient.

Regarding claim 6, Lindsay et al, Ida et al, and Raith disclose all the limitations of claim 5.

Ida et al teach the communication control apparatus selects a plurality of handover destination candidate communication apparatuses (paragraphs 0058 and 0059),

Raith further discloses the communication control apparatus determining priorities of said plurality of handover destination candidate communication apparatuses according said mobile station information sent from said mobile station and said history of mobile station information for past successful handover (column 6, lines 31-50).

Regarding claim 7, Lindsay et al, Ida et al, and Raith disclose all the limitations of claim 5. Raith further discloses the handover control method as claimed in claim 5, comprising the steps of: said communication control apparatus holding said history of mobile station information for all communication apparatuses controlled by said communication control apparatus (column 6, lines 31-36).

Regarding claim 8, Lindsay et al, Ida et al, and Raith disclose all the limitations of claim 5. Lindsay et al further teach the handover control method as claimed in claim 5, comprising the steps of: said communication control apparatus holding said history of mobile station information by each combination of a communication apparatus of handover origination and a communication apparatus of handover destination (paragraph 0234, lines 1-6).

Regarding claims 9, Lindsay et el, Ida et al, and Raith teach all the limitations of claim 8. Raith also discloses the handover control method comprising the steps of: said communication control apparatus selecting a communication apparatus of handover destination corresponding to history data in said history of mobile station information in which a correlation value between said history data and said mobile station information sent from said mobile station is equal to or larger than a predetermined value (column 13, lines 16-22).

In general, the communication control apparatus handovers to another communication apparatus as soon as one of the neighboring communication apparatuses is considered better than the serving communication apparatus.

Therefore, based on the history data, the value of the history data and mobile station information has to be equal or larger.

Regarding claim 10, Lindsay et al, Ida et al, and Raith disclose all the limitations of claim 9. Ida et al and Raith also teach the handover control method as claimed in claim 9, comprising the steps of: when said communication control apparatus selects a plurality of handover destination candidate communication apparatuses (Ida et al, paragraph 0059), said communication control apparatus determining priorities of said plurality of handover destination candidate communication apparatuses according to said correlation value (Raith, column 13, lines 16-22).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (703) 305-0265. The examiner can normally be reached on Monday-Friday, 9:00-6:00, alternating Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wayne Cai 8/16/04
Examiner
Art Unit 2681

WHC

ERIKA GARY
PATENT EXAMINER